REMARKS/ARGUMENTS

I. Status of Claims

Claims 1, 2, and 4-21 are currently pending in the application. This Amendment amends claim 1, cancels claim 3, and addresses each point of objection and rejection raised by the Examiner. Applicant's amendments find support in the specification and drawings as originally filed. No new matter has been added. Favorable reconsideration is respectfully requested.

II. Rejections of Claims under 35 U.S.C. §103(a)

Claims 1-2, 4-11, 13, 14, and 16-20 have been rejected under 35 U.S.C. §103(a) as being obvious over Louis et al. (US 2002/015392), in view of Eriksson et al. (US 2003/0064737. Applicant respectfully traverses the Examiner's interpretation of *Louis et al.*, in view of *Eriksson et al.*

Exemplary embodiments of the present invention improve the efficiency of a power amplifier without increasing a signal error rate, the signal having a large peak-to-average power ratio (PAR). By contrast, *Louis et al.* discloses compensating signal distortion after amplifying in order to overcome nonlinear characteristics. Thus, the objects of exemplary embodiments of the present invention and the cited reference are different from each other.

The main amplifier part recited in independent claim 1 clips a peak signal, which has a predetermined enveloped value or higher, to generate a reduced signal, and then amplifies only the reduced signal. The reduced signal is clipped to the predetermined envelope value or less. As is further recited claim 1, an error signal

indicates a difference between the baseband signal and the reduced signal. By contrast, the main signal path of *Louis et al.* amplifies the original signal.

Moreover, an error correction amplification part recited in independent claim 1 receives the error signal outputted from the recited main amplification part, and then separately amplifies the error signal, which indicates a difference between the baseband signal and the peak reduced signal. The feed-forward correction circuit of *Louis et al.* indicated by the Examiner calculates a distortion signal introduced by amplifying of the main signal path, generates signal for compensation, and provides the signal to the main signal path (refer to step 304 in Fig 3). In other words, *Louis et al.* relates to generating a distortion signal caused by amplification, whereas an exemplary embodiment of the present invention clips a signal before amplification and amplifies both the clipped signal and the resultant error signal. Thus, *Louis et al.* fails to disclose amplifying the error signal, which indicates a difference between the baseband signal and the peak reduced signal, and merely amplifies the original signal.

Finally, the recited summing part in claim 1 combines the signals respectively amplified by the main amplification part and the error correction amplification part, such that the restored original signal is amplified. However, the signal coupler of *Louis et al.* compensates for a signal only, but fails to disclose restoring an original signal by combining divided signals, as the claimed invention does.

The Examiner attempts to cure the deficiencies of *Louis et al.* by combining *Eriksson et al.* The secondary reference, *Eriksson et al.*, merely discloses an offsetting signal (i.e., an anti-phase signal that corresponds to the signal peaks of the input signal above a particular threshold but 180 degrees out-of-phase with the input signal peaks.

The input signal and the offsetting signal are combined so that the offsetting signal reduces the PAR of the input signal to a peak-limited value. The "offsetting signal" disclosed in *Eriksson et al.* is different from the "error signal" recited in the claimed features of an embodiment of the present invention. The "error signal" recited in independent claim 1 indicates a difference between the baseband signal and the peak reduced signal, whereas the "offsetting signal" in *Eriksson et al.* is an anti-phase distortion signal that corresponds to signal peaks of the input signal above a particular threshold but 180 degrees out-of-phase with the input signal peaks. *Eriksson et al.* therefore fails to disclose amplifying the error signal, which indicates a difference between the baseband signal and the peak reduced signal and also fails to disclose or teach a summing part for combining the amplified reduced signal and the amplified *error signal*.

Accordingly, independent claim 1 and its dependent claims 2, 4-12 are not anticipated by *Louis et al.*, in view of *Eriksson et al.* Since independent claim 13 recites the above-referenced inventive aspects of the present invention in method format, claim 13 and its corresponding dependent claims 14-21 are also not anticipated by *Louis et al.*, in view of *Eriksson et al.* for the above reasons.

Moreover, Applicant has further amended independent claim 1 to clarify and define more fully an exemplary embodiment of the present invention. Independent claim 1 now recites:

> 1. A power amplification apparatus for amplifying a baseband signal with a peak-to-average power ratio (PAR), comprising:
>
> a main amplification part <u>comprising an envelop detector, a scale factor decider and a peak reduced signal</u>

generator for detecting envelope values of an input baseband signal, and deciding a scale factor for clipping the baseband signal by a difference between the detected envelop signal and a predetermined reference value, reducing a peak signal having an envelope value more than a predetermined value to a ~~reduced~~ signal having the predetermined value or less by multiplying the baseband signal by the scale factor, and amplifying the reduced signal;

an error correction amplification part for amplifying an error signal indicating a difference between the baseband signal and the reduced signal; and

a summing part for combining the amplified reduced signal and the amplified error signal.

Applicant's particular method of using scale factors when clipping signals, in combination with the other exemplary claimed features of amended claim 1, is not disclosed or taught by *Louis et al.* and *Eriksson et al.* The cited prior art, *Louis et al.* and *Eriksson et al.*, do not disclose, teach, or suggest the Applicant's exemplary combination of using scale factors when clipping signals for amplifying the reduced signal, amplifying an error signal, which indicates a difference between the baseband signal and the peak reduced signal, and combining the amplified reduced signal and the amplified *error signal.* As discussed above, the "error signal" recited in independent claim 1 indicates a difference between the baseband signal and the peak reduced signal, whereas the "offsetting signal" in *Eriksson et al.* fails to cure the deficiencies of *Louis et al.* because *Eriksson et al.* merely teaches an anti-phase distortion signal that corresponds to signal peaks of the input signal above a particular threshold but 180 degrees out-of-phase with the input signal peaks.

Accordingly, Applicant respectfully submits that the combination of *Louis et al.* and *Eriksson et al.* fail to teach each limitation of claim 1, or to even suggest each limitation. Nor would there be any apparent reason to combine *Louis et al.* and

Eriksson et al. Therefore, Applicant respectfully submits that amended claim 1 and its dependent claims 2, 4-12 are patentable over the applied art.

Claim 15 has been rejected under 35 U.S.C. §103(a) as being obvious over Louis et al., in view of Eriksson et al., in further view of Alderton (US 6,034,573). The Examiner alleges that *Alderton* teaches a scale factor for clipping the baseband signal by a difference between the detected envelope signal and a predetermined reference value when the detected signal envelope is above the predetermined reference value.

However, *Alderton* does not disclose or teach the scale factoring claimed in an exemplary embodiment of the present invention. *Alderton* may generally reference a "scaling factor". But, the scaling factor used in Alderton is used in a drastically different process, that is, A-D conversion and D-A conversion via baseband to IF conversion. *Alderton* has nothing to do with clipping and *then* amplifying a signal. Accordingly, the scale factor as claimed is much different than the scale factor in Alderton as referenced by the Examiner.

Moreover, a person have of ordinary skill in the art would have no reason to combine *Alderton*, which is directed to a method for calibrating modulation sensitivity, since *Louis et al.* and *Eriksson et al.* have nothing to do with modulation sensitivity. An Examiner must establish an apparent reason to combine ... known elements. KSR Int'l Co. v. Teleflex Inc., 127 S. Ct. 1727. Under KSR, the Examiner's alleged reason of "to correct the scaling factor" is inadequate since the use of the scaling factor in *Alderton* is drastically different than the scaling factor as claimed.

Therefore, *Alderton* does not cure the deficiencies of *Louis et al.* and *Eriksson et al.* and claim 15 is similarly allowable at least for the reasons outlined above. As such, it is respectfully requested that the obviousness rejection be withdrawn and the claims passed to allowance.

III. Allowable Subject Matter

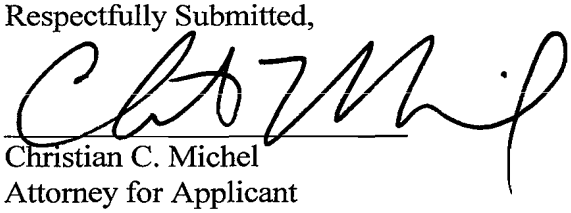
Claims 12 and 21 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form.

Applicant appreciates the indication that claims 12 and 21 would be allowed if rewritten in independent form, but respectfully submits that a broader scope of the invention is patentable in view of the art of record. Applicant requests that the rewriting of claims 1 and 21 be held in abeyance until the Examiner has had the opportunity to reconsider the allowability of the parent claims.

IV. Conclusion

In view of the above, it is believed that the above-identified application is in condition for allowance, and notice to that effect is respectfully requested. Should the Examiner have any questions, the Examiner is encouraged to contact the undersigned at the telephone number indicated below.

Respectfully Submitted,



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Dated: July 5, 2007